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JUNE 13, 1980

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REGION 10  
SEATTLE, WASHINGTON 98101

APPLICATION OF:

Atlantic Richfield Company  
P.O. Box 360  
Anchorage, Alaska 99510  
AND  
SOHIO Petroleum Company  
Pouch 6-612  
Anchorage, Alaska 99502

No. PSD-X80-09  
APPROVAL OF APPLICATION  
TO CONSTRUCT

Pursuant to the Agency regulations for the Prevention of Significant Deterioration of Air Quality (PSD) set forth at Title 40, Code of the Federal Regulations, Part 52 and based upon information submitted on October 17, 1979 and supplemented on December 13, 1979 and January 24, 1980 by the Atlantic Richfield Company and the SOHIO Petroleum Company, the Regional Administrator now finds as follows:

FINDINGS

1. The Atlantic Richfield Company and the SOHIO Petroleum Company (hereafter referred to as ARCO/SOHIO) propose to install ~~forty-two~~ <sup>Forty-Four</sup> natural gas fired turbines and thirty-one gas fired heaters in the oil field at Prudhoe Bay, Alaska.
2. An analysis of projected emissions indicates that this project has the potential to emit more than 250 tons per year of nitrogen oxides (NO<sub>x</sub>), particulate matter (PM) and

\* Per SWAP I-11, EPA letter 2/5/81

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carbon monoxide (CO), and is therefore subject to PSD review for those pollutants.

3. The proposed modification is located in an area designated as "Class II" under Section 162(b) of the Clean Air Act.

4. Modeling analyses of CO, NO<sub>x</sub>, and PM have been conducted and demonstrate that while emissions of these pollutants will increase, the modification will not cause any violations of the applicable National Ambient Air Quality Standards or PSD increments so long as the plant is operated in accordance with the conditions specified below. With the application of best available control technology, as required by Section 165 (a)(4), operation of the proposed turbines and heaters will meet the applicable PSD requirements.

Accordingly, it is hereby determined that, subject to the conditions set forth below, Atlantic Richfield Company and SOHIO Petroleum Company will be permitted to install the subject turbines and heaters at Prudhoe Bay, Alaska.

#### APPROVAL CONDITIONS

1. Emissions of nitrogen oxides (NO<sub>x</sub>), particulate matter (PM), and carbon monoxide (CO) shall not exceed the following:

Emissions Limitations					
Location	Equipment	NO <sub>x</sub>	Pollutant (tons/yr)		Part.
			CO		
G.C. #1	*Turbines	2553 3,230	476 730		63 60
	*Heaters	184 999	32 192.7		19 15.9
G.C. #2	*Turbines	4615 543	861 142		115 9
	*Heaters	219 82	36 15		21 5
G.C. #3	*Turbines	2553 2461	476 593		63 49
	*Heaters	184 103	32 26		19 8

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1	Well Pads	*Heaters	133	13	8
2	Central	*Turbines	646 <sup>958</sup>	120 78	16 22
	Compressor Plant	*Heaters	22	2	1
3	F.S. #1	*Turbines	3049237 <del>23</del>	569575.4	7048.3
4	F.S. #2	*Turbines	39792513 <del>6</del>	742 614.8	91 51
5		*Heaters	35	8	5
6	F.S. #3	*Turbines	39793528	742 810	91 67
7			22357	4181	317
8	Total		22151	4109	582

\* Gas Turbines NO<sub>x</sub> 150 (14.4/Y) ppm\*\*  
CO 0.17 lb/MM 109.6 lb CO/10<sup>6</sup> scf (fuel)  
PM 14 lb PM/10<sup>6</sup> scf (fuel)  
10% Opacity Limit

\* Process Heaters

> 43 x 10 <sup>6</sup> BTU/hr	NO <sub>x</sub>	0.08 lb NO <sub>x</sub> /10 <sup>6</sup> BTU
< 43 x 10 <sup>6</sup> BTU/hr	NO <sub>x</sub>	0.19 lb NO <sub>x</sub> /10 <sup>6</sup> BTU
	CO	0.018 lb CO/10 <sup>6</sup> BTU
	PM	0.011 lb PM/10 <sup>6</sup> BTU
		5% Opacity Limit

\*\* NO<sub>x</sub> emissions factor for gas-fired turbines is modified by an efficiency factor (Y) which cannot exceed 14.4 kilojoules/watt hour (manufacturer's rated heat rate at rated peak load).

Based on 15% oxygen on a dry basis.

2. With the exception of NO<sub>x</sub>, PM, and CO, increases in potential emissions of any pollutant regulated under the Clean Air Act resulting from this modification will be less than 250 tons per year.

3. ARCO/SOHIO shall notify Alaska Department of Environmental Conservation (ADEC) of any occurrence of any emissions in excess of limits specified in Condition Numbers 1 and 2 above; such notification shall be forwarded to ADEC

1 in writing in a timely fashion and in each instance no later  
2 than ten (10) days from the date of such occurrence. The  
3 notification shall include an estimate of the resultant  
4 emissions and a narrative report of the cause, duration and  
5 steps taken to correct the problem and avoid a recurrence.  
6 ARCO/SOHIO shall contemporaneously send a copy of all such  
7 reports to EPA.

8 4. This approval shall become void if on-site construction  
9 is not commenced within eighteen (18) months after receipt  
10 of the approval or if on-site construction once initially  
11 commenced is discontinued for a period of eighteen (18)  
12 months.

13 5. As approved and conditioned by this permit any  
14 construction, modification or operation of the proposed  
15 facility shall be in accordance with the application which  
16 resulted in this permit. Nothing in this permit shall be  
17 construed to relieve the Atlantic Richfield Company and the  
18 SOHIO Petroleum Company of its obligations under any state  
19 or federal laws including Sections 303 and 114 of the Clean  
20 Air Act.

21 6. Compliance with emission limitations shall be  
22 demonstrated by source tests and a program of emission  
23 monitoring as described below:

24 a. Compliance Demonstration:

25 Compliance testing shall be conducted within 60  
26 days after achieving the maximum production rate at which  
27 the turbines or process heaters will be operated but not  
28 later than 180 days after startup of the specific emission  
29 source. The NSPS testing requirements for NO<sub>x</sub> from gas  
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1 turbines (40 CFR 60.335) shall be followed for each turbine.  
2 The company may submit for EPA approval an alternative test  
3 plan for the gas turbines addressing such alternatives as  
4 factory testing rather than on-site testing and testing of a  
5 certain proportion of the gas turbines for each model group  
6 rather than each individual gas turbine. EPA Method 7 shall  
7 be used for NO<sub>x</sub> from the process heaters. Only one of  
8 each kind of process heater must be tested. The company  
9 shall submit a test plan to EPA for approval to demonstrate  
10 that the heater tested is representative of the heaters for  
11 which testing is exempted. No compliance testing is  
12 required for CO or PM.

13 b. Emission Monitoring:

14 In addition to the NSPS requirements (40 CFR  
15 60.334) one of the following monitoring schemes is  
16 required: (a) a continuous monitoring system shall be  
17 installed to monitor CO or O<sub>2</sub> for all gas-fired process  
18 heaters with a capacity greater than 43x10<sup>6</sup> BTU/hr. These  
19 monitors shall comply with the specification requirements in  
20 Appendix B of 40 CFR Part 60; or (b) a periodic monitoring  
21 program for the process heaters with a capacity greater than  
22 43x10<sup>6</sup> BTU/hr using a portable CO or O<sub>2</sub> analyzer. The  
23 company shall submit a monitoring plan to EPA for approval  
24 describing the details of the program such as monitoring  
25 frequency, proposed instrumentation, and quality assurance  
26 procedures. Monitoring records shall be available to EPA  
27 upon request and shall be maintained for a period of two  
28 years.

29 7. EPA and ADEC shall be notified of the commencement of  
30 construction and the start up date within thirty (30) days  
31 of the date of their occurrence.

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1 8. The United States Court of Appeals for the D.C. Circuit  
2 has issued a ruling in the case of Alabama Power Co. v.  
3 Douglas M. Costle (78-1006 and consolidated cases) which  
4 will have significant impact on the EPA PSD program. The  
5 applicant is hereby advised that this permit may be subject  
6 to reevaluation as a result of the final court decision and  
7 its ultimate effect.

8 Access to the source by EPA or State regulatory  
9 personnel will be permitted upon request for the purpose of  
10 compliance assurance inspections. Failure to allow such  
11 access is grounds for revocation of this permit.  
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16 JUN 13 1990

17 Date

18 *D. P. Dubois*  
19 Donald P. Dubois

20 Regional Administrator  
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